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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/217,633	12/22/1998	MASAHARU NAKAMORI	0505-047P	4151

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EXAMINER

TRAN, HIEN THI

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/217,633

Applicant(s)

NAKAMORI ET AL.

Examiner

Hien Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-8,13-15,18-20 and 23-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-8,13-15,18-20 and 23-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 15, 18-20, 23-25, 27, 29, 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, in claim 15, the last line, the specific phrase of "less than 2%" is nowhere disclosed in the original specification. See claims 25, 29 likewise.

In claim 20, the last line, the specific phrase of "less than 1%" is nowhere disclosed in the original specification. See claims 27, 31 likewise.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 15, 18-20, 23-25, 27-29, 31-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 15, the last line, it is unclear as to where the "2%" is disclosed in the original specification. See claims 25, 29 likewise.

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In claim 20, the last line, it is unclear as to where the "1%" is disclosed in the original specification. See claims 27, 31 likewise.

In claim 28, line 2 it is unclear as to what applicants are attempting to recite since the phrase of "2.5 wt%" is outside the range set forth in claim 1. See claim 32 likewise.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1, 6-8, 13-15, 18-20, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whittenberger et al (5,651,906) in view of Miyazaki et al (5,792,285), Uematsu et al (5,302,214), Arai et al (5,151,254), either Bullock et al (4,810,588) or Hitachi et al (5,177,960) and either Toyoda et al (5,336,472) or Maus (4,713,361).

Whittenberger et al discloses a catalytic converter comprising:

a honeycomb structure shaped in a cylindrical form, said honeycomb structure having a plurality of channels (i.e. air vents) extending in an axial direction thereof; and

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a cylindrical case covering an outer peripheral surface of the honeycomb structure wherein the case is composed of stainless steel.

The apparatus of Whittenberger et al is substantially the same as that of the instant claims, but fails to disclose whether the stainless steel case may be ferritic stainless steel case containing Mo.

However, Miyazaki et al discloses the conventionality of using ferritic stainless steel containing 0.1 - 3.0 wt% of Mo and 0.25 - 1/0 wt% of P for constructing converter housing due to its excellency in stress corrosion cracking resistance and oxidation resistance (col. 4, lines 58-65). Similar, Uematsu et al discloses the conventionality of using ferritic stainless steel containing 1 - 4.5 wt % Mo and 0.017 - 0.025 wt% P for constructing exhaust gas pathway of an automobile due to its excellency in improving high temperature oxidation resistance and corrosion resistivity (col. 6, lines 19-28).

It would have been obvious to one having ordinary skill in the art to use the ferritic stainless steel containing Mo and P as taught by Miyazaki et al and Uematsu et al as an alternate material for the converter housing in the apparatus of Whittenberger et al for an improved stress corrosion cracking resistance and high temperature oxidation resistance thereof and since use of such is conventional and no cause for patentability here.

Since Miyazaki et al discloses the stainless steel containing 0.1 - 3.0 wt% of Mo and Uematsu et al discloses the stainless steel containing 1 - 4.5 wt % Mo, such ranges overlap the range of 0.3 to 2.5 % recited in the instant claim.

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Selecting the specific percentage of Mo is within the purview of one having ordinary skill in the art during routine experimentation and optimization of the system based on the teachings of Miyazaki et al and Uematsu et al.

Since the modified apparatus of Whittenberger discloses stainless steel for both casing and honeycomb structure, both casing and honeycomb structure inherently have the same coefficient of linear expansions as that of the instant claims.

With respect to outermost air vent, Toyoda et al and Maus disclose the conventionality of providing the catalytic honeycomb carrier in which the outermost air vents of the catalytic carrier are formed by cooperation of an entire surface of the case and a waved plate of the honeycomb carrier (note the Figure in Maus and col. 5, line 19-23 in Toyoda et al).

It would have been obvious matter of design choice to alternately locate the waved plate at the outermost surface since such a modification would have involved a mere substitution of known equivalent structures as evidenced by Toyoda et al and Maus. A substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

With respect to the limitation of a catalyst layer formed on an inner surface of the case, Arai et al discloses provision of coating a catalyst layer on the inside surface of the casing (col. 6, lines 39-42).

It would have been obvious to one having ordinary skill in the art to coat the catalyst layer on the inside surface of the casing of Whittenberger et al so as to increase the exhaust gas cleaning effect as taught Arai et al.

Since Whittenberger et al discloses that the honeycomb structure and the casing are formed of stainless steel, apparently the structure and the casing will have a reduced linear expansion during warm up and use as that of the instant claims.

With respect to the specific wave type, Hitachi et al recognizes the conventionality of providing a honeycomb having wave plates and base plates, the waved plates may have trapezoidal shape, in which first sections that are substantially flat and each of the base plates having an inner surface and an outer surface being disposed against the first flat sections of adjoining ones of the waved plates located inwardly and outwardly thereof, respectively; the waved plates also having second sections extending outwardly from one of the base plates to the base plate immediately adjacent thereto; wherein the second sections of the waved plates are uninterrupted planar surfaces extending an axial direction from one end of the carrier to another, thus forming the air vent as uninterrupted passages from one end of the carrier to the other end (Fig. 3).

Similarly, Bullock et al discloses the conventionality of providing a honeycomb having wave plates and base plates, the waved plates may have trapezoidal shape with all of the details as set forth above.

It would have been obvious to one having ordinary skill in the art to select an appropriate wave type for the waved plates in the modified honeycomb of Whittenberger et al as taught by Hitachi et al or Bullock et al for the known and expected results of obtaining the same results in the absence of unexpected results and since such a modification would have involved a mere substitution of known equivalent structures as evidenced by Hitachi et al or Bullock et al. A substitution of known equivalent structures is generally recognized as being within the level of

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ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

Note that the newly added limitations regarding the heating temperature, time, moisture added atmosphere and oxidation increase as set forth in claims 15, 20, 25-27, 29, 31 are directed to method of making which is of no patentable moment in apparatus claim since it has been held that the method of forming the device is not germane to the issue of patentability of the device itself.

8. Claims 1, 6-8, 13-15, 18-20, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honma (5,323,608) in view of Miyazaki et al (5,792,285), Uematsu et al (5,302,214), Arai et al (5,151,254), either Bullock et al (4,810,588) or Hitachi et al (5,177,960) and either Toyoda et al (5,336,472) or Maus (4,713,361).

Honma discloses a catalytic converter comprising:

a stainless steel honeycomb structure 14 shaped in a cylindrical form, said honeycomb structure having a plurality of channels (i.e. air vents) extending in an axial direction thereof; and

a cylindrical case 12 covering an outer peripheral surface of the honeycomb structure wherein the case is composed of stainless steel (col. 2, line 58 to col. 3, line 30).

The apparatus of Honma is substantially the same as that of the instant claims, but fails to disclose whether the stainless steel case may be ferritic stainless steel case containing Mo.

The same comments with respect to Miyazaki et al, Uematsu et al, Arai et al, Bullock et al, Hitachi et al, Toyoda et al, and Maus apply.

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Note that the newly added limitations regarding the heating temperature, time, moisture added atmosphere and oxidation increase as set forth in claims 15, 20, 25-27, 29, 31 are directed to method of making which is of no patentable moment in apparatus claim since it has been held that the method of forming the device is not germane to the issue of patentability of the device itself.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 6-8, 13-15, 18-20, 23-34 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hien Tran

Hien Tran
Primary Examiner
Art Unit 1764

HT
May 13, 2005